

CLAIMS

What is claimed is:

- 5 1. A method for controlling the amount of perforated surface area on a perforated cylindrical outer surface of a hollow cylindrical drum, through which air can be drawn into the hollow cylindrical drum having an inner surface, to provide a suction adhering surface for holding sheet materials on the outer surface of the drum, the cylindrical drum having a diameter and an axis, and the method characterized by the steps of:
 - 10 providing two axially movable disc-like baffle plates within the drum, each having a diameter substantially equal to the diameter of the drum; and
 - varying the axial positions of the baffle plates to control a portion of the perforated surface area through which air can be drawn into the hollow cylindrical drum.
 2. The method of claim 1, further characterized by the step of:
 - 15 slidably sealing each of the baffle plates against the inner surface of the drum.
 3. The method of claim 1, further characterized by the step of:
 - moving the baffle plates toward or away from one another.
 4. The method of claim 1, further characterized by the step of:
 - moving the baffle plates toward or away from one another with axial symmetry.
 - 20 5. The method of claim 1, further characterized by the step of:
 - removing air from a volume of the interior of the drum between the two baffle plates.
 6. A method for controlling the amount of perforated surface area on a perforated cylindrical outer surface of a hollow cylindrical drum having an inner surface, through which air can be drawn into the hollow cylindrical drum to provide a suction adhering surface for
 - 25 holding elastomeric sheet materials on the outer surface of the drum, the method characterized by the steps of:
 - providing, within the drum, a circumferentially moveable curved cylinder element conforming to the inner surface of the perforated cylindrical drum; and
 - controlling the amount of perforated surface area through which air can be drawn into
 - 30 the hollow cylindrical drum by circumferentially positioning the curved cylinder segment adjacent a portion of the inner surface of the hollow perforated cylindrical drum.
 7. The method of claim 6, further characterized by the step of:

providing two axially movable disc-like baffle plates within the drum, each having a diameter substantially equal to the diameter of the drum; and

varying the axial positions of the baffle plates to control a portion of the surface area through which air can be drawn into the hollow cylindrical drum.

5 8. Apparatus for controlling suction through perforations extending through a surface of a hollow cylindrical drum having an inner surface, a circumference and a axis, characterized by:

10 a circumferentially moveable cylindrically curved element disposed inside the hollow cylindrical drum and having an axis of rotation contiguous with the axis of the hollow cylindrical drum and having a length less than a length of a cylindrical volume inside the hollow cylindrical drum, and an outermost radius of curvature about equal to a radius of curvature of the inner surface of the hollow perforated cylindrical drum; and

15 axially moveable baffle plates disposed inside the drum, each baffle plate having a radius of curvature less than the radius of curvature of the inner surface of the perforated cylindrical drum.

9. The apparatus of claim 8 characterized in that the circumferentially moveable cylindrically curved element has an arc width in the range of about 60 degrees to about 120 degrees with respect to the axis of rotation of the cylindrically curved element.

20 10. The apparatus of claim 9 characterized in that the circumferentially moveable cylindrically curved element has an arc width in the range of about 90 degrees with respect to the axis of rotation of the cylindrically curved element.

25 11. The apparatus of Claim 9 characterized in that each of the axially moveable circular barriers disposed inside each opposing end of the perforated cylindrical drum has a perimeter seal made of felt or other suitable material to block the movement of air around the perimeter of each of the two moveable circular barriers.

12. The apparatus of Claim 9 characterized in that:

30 each of the axially moveable circular barriers disposed inside each opposing end of the perforated hollow cylindrical drum are able to be moved towards or away from each other to vary the width of a central perforated surface area through which air can be drawn to provide an outer suction adhering surface on the perforated hollow cylindrical drum.